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Ninth New Collegiate Dictionary

A Merriam-Webster®

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Abbrevia

3: the quality of being deep 4: the degree of intensity (\sim of a color); also: the quality of being profound (as in insight) or full (as of knowledge) 5: the quality or state of being complete or thorough; THOROUGHNESS (\sim of indexing) (a study will be made in \sim) — depth-less

OUGHNESS (~ of indexing) (a study will be made in ~)—depth-less \('depth-los\) ad\('depth-los\) ad\('depth-los\) ad\('depth-los\) ad\('depth-los\) ad\('depth-los\) ad\('depth-los\) ad\('depth-los\) adainst submarines that is designed to detonate at a predetermined depth—called also \(depth\) bomb\(depth\) depth perception n (ca. 1909): the ability to judge the distance of objects and the spatial relationship of objects at different distances depth psychology (1924): FSYCHOANALYSIS: \(also\) is psychology concerned esp. with the unconscious mind deput-ation \(\depty-\) dep-y-\(\depty-\) tashan\(\nagger\) n (14c) is the act of appointing a deputy 2: a group of people appointed to represent others depute \(\delta\) deputen fr. LL deputare to assign, fr. L, to consider (as), fr:\(de-\) to appoint as deputy \(\delta\) consider ((14c)); \(\delta\) tized; -tizelng \(v\) (ca. 1730): to appoint as deputy \(\delta\) vi: to act as deputy \(-\delta\) dep-u-tiza-tion \(\delta\) dep-y-3-\(\delta\) as shon\(\delta\).

deputty \dep-yat-\(\tilde{n}\), n. pl-ties [ME, fr. MF deput\(\tilde{p}\), pp. of deputer] (15c)

1 a: a person appointed as a substitute with power to act b: a second-in-command or assistant, who usu takes charge when his superior is absent 2: a member of the lower house of some legislative asseming a second-in-command or assistant.

blies

derac-inate (')dē-'ras'-n-āt\ v'-nat-ed; -nat-ing [F déraciner, fr. MF

desrac-inate, fr. des-de- + racine root, fr. LL radicina, fr. L radic-, radix

more at Root] (1599): UPROOT — de-rac-i-na-tion \(\)dē-ras-'n-ā-

desraciner, fr. des. de. + racine root, fr. LL radicina, fr. L. radic, radix — more at ROOT] (1599): UPROOT — deraci-nation \(\)\(\lambda_{-ras}^2-\)\(\lamb

more at RELINQUISH] (1649) 1: abandoned esp. by the owner or occupant: RUN-DOWN 2: lacking a sense of duty: NEGLIGENT 2 derelict n (1670) 1 a: something voluntarily abandoned; specif: a ship abandoned on the high seas b: a tract of land left dry by receding water 2: a destitute homeless social misfit: VAGRANT, BUM dere-liction \der-a-lik-shon\n (1597) 1 a: an intentional abandonment b: the state of being abandoned 2: a recession of water leaving permanently dry land 3 a: intentional or conscious neglect: Delinquency (~ of duty) b: FAULT. SHORTCOMING dere-press \def-ri-pres\ vi (1962): to activate (a: gene) by releasing from a blocked state — de-re-pression\-prest-on\ n (ned-rid-dig) to de-rid-dig (di-rid\ vi de-rid-ed; de-rid-ing [L deridere, fr. de-+_ridēre to laugh — more at RIDICULOUS] (1530). 1: to laugh at contemptuously 2: to subject to sub. bitter or contemptuous ridicule \(syn\) see RIDICULE — de-rid-er n — de-rid-ing-ly\-rid-in-le\ adv
de ri-guent \(\frac{1}{16} - \frac{

de-riva-tive (di-riv-3t-iv) in (136). It is wort to that do you can be in a function to the corresponding change in its independent variable as the latter change approaches zero 4 a: a chemical substance related structurally to another substance and theoretically derivable from it b: a substance that can be made from another substance in one or more

steps

derivative adj (ca. 1530) 1: formed by derivation 2: made up of or
marked by derived elements — deriva tive ly adv — deriva tive ness

nderive \di-'riv\ vb derived; deriving [ME deriven, fr. MF deriver, fr. L derivare, lit., to draw off water, fr. de- + rivus stream — more at RISE] v1 (14c) 1 a: to take or receive esp. from a specified source b: to obtain from a specified source; specif: to obtain (a chemical substance)

actually or theoretically from a parent substance. 2: INFER DEDUCE archaic: BRING 4: to trace the derivation of ~ vi: to have the derivation of come as a derivative syn see SPRING—derive no retired to the derme or derme - or dermo - comp form [NL fr. Gk derm. derme to derma fr. derein to skin — more at TEAR]: skin (derma) derma.

derm \dorm\ n comb form [prob fr. F -derme, fr. Gk derma]

covering (ectoderm)
-der-ma \ dər-mə\ n comb form, pl, -der-mas or -der-ma-ta \ mat-a \ \ III.

fr. Gk dermat-, derma skin]: skin or skin ailment of a (specifica) m

derma \dot-ma\n \comb form \plant \derma \comb form \comb form \plant \derma \cdot-ma\n \cdot \cdot \derma \derma \cdot \derma \derma \cdot \derma \derma \cdot \derma \derma \cdot \derma \

der ma-tous \'dar-mat-as\ adj. comb. form [Gk. dermat. dermat.] having a (specified) type of skin (sclerodermatous) dermatous (dor-moi-ses) daj. como jumi in having a (specified) type of skin (sclerodermatous) der mes-tid (Q) dor-mes-tod n [deriv. of Gk. dermestes, a leather am worm, lit., skin eater, fr. derm + edmenal to eat — more at leather 1891): any of a family (Dermestidae) of beetles with clubbed and that are very destructive to dried meat, fur, wool, and insect collection

dermestid adi

— uermestuu aa) der-mis \'dər-məs\ n [NL, fr. LL -dermis] (ca. 1830): the sensitive cular inner mesodermic layer of the skin — called also corium culus der-mis \'dər-məs\ n comb form [LL, fr. Gk, fr. derma]: layer.

or tissue (endodermis) der moid cyst \dor-moid \ n (1872): a cystic tumor often of the of that contains skin and skin derivatives (as hair or teeth) called a cystic tumor.

der-moid \'dor-, moid \'der-moid \'dor-, moid \'der-mo-tro-pik, -'träp-ik\' adj (1926) : attractell localizing in, or entering by way of the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and ingot der-nier cri \, dern-, yā-'krē\ n [F, lit., last cry] (1896) :. the newesting the skin (~ viruses) and little crit \, dern-, viruses (~ viruses)

idero-gate \der-9-gāt\ vb -gat-ed; -gat-ing [LL derogatus. pp. ing gare, fr. L, to annul (a law); detract, fr: de-+, rogare to ask, progal wb — more at Right] vr (15c): to cause to seem inferior: DISTAIS — vi 1: to take away a part so as to impair: DETRACTA[27:10a] beneath one's position or character — der-o-ga-tion \der-o-ga-tion \de

deep drill hole (as of an oil well) for supporting boring tackless hoisting and lowering derrière \der-\vec{e}-\vec{e}\sigma\rangle \lambda rie \der-\vec{e}-\vec{e}\sigma\rangle \rangle \ran

des. prejix | F des., tr. OF des.— more at be-j: be vowels (desoxy-) desa-cral-ize \('\)\de-'sā-kr-,līz, 'sak-r-\ v' -ized; izing, līzing, līz

descant \'des-,kant\ n [ME d)
ML discantus, fr. L dis- + car a melody or counterpoint su the art of composing or im the music so composed or i the music so composed or i sperimposed counterpoint to a all of the sopranos 2: disc discant 'des-kant, des-,' dis-brodly: SING 2: COMMENT, the sesend \ dis-'send \ vb [ME de dar, fr. de- + scandere to clin from a higher place or level to to pass in discussion from w sive 3 a: to come down fred in passive (was ~ed fro bentance (an heirloom that I mannission (songs ~ed fro atend downward (the road from or make a sudden atta attend downward (the road of down or make a sudden atta proceed in a sequence or grad renote to nearer or more recedinity: stoop b: to worsen 1: to pass, move, or climb d along — de-scend-ble \-'sen-cessen-dent or de-scendent \-'dans, fr. L. descendent, des moving or directed downw escendant or descendent n

descendens, fr. L] (1600) 1 common stock 2: one deri

bscender \di-'sen-dor, 'dē-\\
(us p) that descends below to
that has such a part
bscension \di-'sen-chon\n, a
cscent \di-'sent\n [ME, fr.]

derivation from an ancest transmission or devolution descending line c: the fact stock d: the shaping or transmission from a source descending 3: a step down generation in an ancestral lin tion downward : SLOPE b : & way) cobs: the lowest paid disconcerting appearance (as station or value): DECLINE (colored baseribe \diskrib\) vi describere to write — more at account of in words (\sigma a pic or picture: DELINEATE 3 ob outline of (\sigma a colored baseribetion) \diskrip-shan\) astribon \diskrip-shan\ \text{stription}, \text{ [1. description}, \text{ [1. des

mental image of something toon b: a descriptive stat adventures 2: kind or clures (opposed to any tax of descriptive \text{diskriptiv} \te

Unello

deso-crate \'des-i-,krāt\ vi -c

crate] (1677) 1: to violi
inverently or contemptuo
ow the part of others (the k
crated so many waterfronts
crater \-,krāt-ər\ n

deso-cration \,desi-'krā-shi
ing: the state of being deso

desecration \des-t-kra-sn.
desecration \des-t-kra-sn.
desecregate \('\)dē-'seg-ridesecregate \('\)dē-'seg-ridesecregate

ine members of a particulation desegregation desegregation () de-, segrification instance of desegregation desegre Program

Bresi-tize \(')dē-'sen(t)-s hypersensitive individual) tely insensitive to radia aday insensitive to radia allour, specif: to extingu allour, specif: to extingu in guilt o stimuli th local parts of the specific and parts of the specific and decorate in [ME, f

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Searching 1976 to present...

Results of Search in 1976 to present db for: (ACLM/"derived from" AND ACLM/"polynucleotide"): 345 patents. Hits 1 through 50 out of 345



Refine Search

ACLM/"derived from" and aclm/"polynucleotide"

PAT. Title NO.

- 1 6,667,155 Tarrier for gene detection and its use for detecting validity of interferon therapy
- 2 6,653,075 TRandom domain mapping
- 3 6,649,371 Potassium channel KCNQ5 and sequences encoding the same
- 4 6,645,933 Receptor ligand VEGF-C
- 5 6,645,746 Tarbonyl reductase, gene thereof and method of using the same
- 6,642,375 Fluorescent substances
- 7 6,642,052 Efficient generation of adenovirus-based libraries by positive selection of adenoviral recombinants through ectopic expression of the adenovirus protease
- 8 6,632,631 Methods for the identification of inhibitors of homocitrate synthase as antibiotics
- 9 6,627,193 Methods and compositions for control of blood coagulation
- 10 6,613,583 In Electrochemiluminescent label based on multimetallic assemblies
- 11 6,610,506 Transferrin binding proteins of Pasteurella haemolytica and vaccines containing same
- 12 6,610,477 II Human DNA mismatch repair proteins
- 13 6,610,303 T Papilloma viruses, products for the detection thereof as well as for treating diseases caused by them
- 14 6,605,467 Fusion protein comprising the whole or part of the PP65 protein of human CMV, useable in particular for preparing a vaccine
- 15 6,605,449 A Synthetic ligation reassembly in directed evolution
- 16 6,602,705 Expression of HIV polypeptides and production of virus-like particles
- 17 6,596,296 In Drug releasing biodegradable fiber implant
- 18 6,593,110 The Checkpoint-activating oligonucleotides

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Results of Search in 1976 to present db for: ACLM/"derived from" AND ACLM/transposon: 40 patents. Hits 1 through 40 out of 40

Jump To	
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Refine Search ACLM/"derived from" AND ACLM/transposon

PAT.

NO.

Title

- 1 6,505,126 T Method to identify fungal genes useful as antifungal targets
- 2 6,391,614 T Auxiliary gene and protein of methicillin resistant bacteria and antagonists thereof
- 3 6,329,181 T Helper functions for recombinant vector production
- 4 6,306,625 T Method for obtaining expression of mixed polypeptide particles in yeast
- 5 6,303,381 **T** Insertion sequence
- 6 6,297,031 T Escherichia coli strain and method for producing L-threonine
- 7 6,291,214 T System for generating recombinant viruses
- 8 6,258,571 T High throughput DNA sequencing vector
- 9 6,207,883 © DNA sequences coding for a protein conferring male sterility
- 10 6,156,574 T Methods of performing gene trapping in bacterial and bacteriophage-derived artificial chromosomes and use thereof
- 11 6,143,530 T Circular DNA expression cassettes for in vivo gene transfer
- 12 6,130,090 I Methods of performing gene trapping in bacterial and bacteriophage-derived artificial chromosomes and use thereof
- 13 6,096,717 I Method for producing tagged genes transcripts and proteins
- 14 5,965,791 T Vector for introducing a gene into a plant, and methods for producing transgenic plants and multitudinously introducing genes into a plant using the vector
- 15 5,928,946 T Lactic acid bacteria producing lantibiotics similar to nisin A
- 16 5,916,810 T Method for producing tagged genes transcripts and proteins
- 17 5,837,509 T Recombinant lactic acid bacterium containing an inserted promoter and method of constructing same
- 18 5,830,457 T Recombinant beta-lactamase, usable as carrier molecule in immunogenic compositions
- 19 5,804,414 T Method of amplifying genes using artificial transposons in coryneform bacteria

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Second Edition

Paul Singleton Diana Sainsbury

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hedral head (diam. ca. 60 nm) with a short tail (ca. 20 × 9 nm) attached at one vertex via a collar; it includes five or more proteins and ca. 2% by weight of fucose. Genome: linear dsDNA (MWt 2.6 × 10⁷). Host: Acholeplasma laidlawii; plaques minute. Infected cells are killed but not lysed; progeny virions seem to be released in membrane vesicles which subsequently rupture. myalgia Muscle pain.

Myambutol Syn. ETHAMBUTOL.

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myb An oncogene originally identified as the transforming determinant in avian myeloblastosis virus (AMV: see avian acute leukaemia VIRUSES); v-myb is an altered form of a cellular sequence amv, differing from amv in gene structure, transcript structure, gene product structure, and in the intracellular location (nucleus) of its product [Book ref. 113, pp. 143-151]. v-myb⁺ AMV can transform chicken haematopoietic cells in culture, but differs from other acutely transforming retroviruses in that it does not transform fibroblasts in culture; it causes a rapidly fatal leukaemia only in chickens.

myc An oncogene originally identified as the transforming determinant of avian myelocytomatosis virus (MC29: see AVIAN ACUTE LEU-KAEMIA VIRUSES). The MC29 v-myc product is a gag-myc fusion protein (P110^{gag-myc}) which has no protein kinase activity; it binds to dsDNA and occurs — possibly as a chromatin component — in the nucleus. In humans, cmyc is located on chromosome 8 and is involved in the pathogenesis of BURKITT'S LYM-PHOMA. In chickens, c-myc activation by AVIAN LEUKOSIS VIRUSES appears to result in the development of lymphoid leukosis.

mycangium Syn. MYCETANGIUM.

Mycelia Sterilia See agonomycetales.

mycelium A group or mass of discrete hyphae (see HYPHA): the form of the vegetative thallus in many types of fungi and in certain bacteria (see ACTINOMYCETALES). (See also AERIAL MYCELIUM, SPROUT MYCELIUM; SUBSTRATE MYCELIUM; cf. PLECTENCHYMA.)

Mycena See AGARICALES (Tricholomataceae) and BIOLUMINESCENCE.

mycetangium (mycangium) In certain insects: a specialized region within which symbiotic fungi are carried; see e.g. AMBROSIA FUNGI and WOODWASP FUNGI.

mycetism (mycetismus) Poisoning due to the ingestion of certain mushrooms (MUSHROOM sense 1) — e.g. the poisonous species of Amanita or Cortinarius. (cf. MYCOSIS, MYCO-TOXICOSIS; see also e.g. AMATOXINS, MUSCARINE and PHALLOTOXINS.) Mycetism can occur in e.g. sheep and cattle as well as in humans; thus, e.g. the toxins in Cortinarius speciosis simus are known to cause renal failure both

in humans and in sheep. (See also ORELLANIN POISONING.)

mycetismus Syn. MYCETISM.

mycetocyte In certain invertebrates, particularly insects: a specialized cell which contains intracellular bacterial or fungal symbionts; if the endosymbiont is a bacterium the term BACTERIOCYTE may be used — although 'mycetocyte' is often used regardless of the nature of the endosymbiont. Mycetocytes may be irregularly distributed in certain tissues (e.g. the gut lining) or they may be aggregated into specialized organelles (mycetomes) which are usually associated with the gut. In at least some cases the microflora of the mycetome supplies essential nutrients to the insect host. (See also MYCETANGIUM and TROPHOSOME.) [Molecular biology of symbiotic bacteria in aphid mycetocytes: MS (1986) 3 117-120.]

mycetoma (1) Syn. MADUROMYCOSIS. (fungus ball) A tumour-like mycelial mass formed in the tissues in certain mycoses (see e.g. ASPERGILLOSIS and COCCIDIOIDOMYCOSIS). mycetome See MYCETOCYTE.

mycetophagous Syn. MYCOPHAGOUS.

Mycetozoa A subphylum (phylum gymno-MYXA) comprising two classes: Eumycetozoa (see EUMYCETOZOEA) and Acrasea (see ACRA-SIOMYCETES).

Mycoacia See APHYLLOPHORALES (Corticiaceae).

mycobacteriophage Any BACTERIOPHAGE which can infect one or more Mycobacterium spp. Most mycobacteriophages have a hexagonal head and a non-contractile tail (contractile in 13), and many are readily inactivated by organic solvents. Mycobacteriophages include both temperate and virulent types; in certain cases phage progeny may be released from the living host cell. [Book ref. 54, pp. 326-

Mycobacterium A genus of Gram-positive, aerobic to microaerophilic, non-motile, asporogenous bacteria (order ACTINOMYCE-TALES, wall type IV) which are acid-fast during at least some stage of growth. Cells: straight or curved rods, ca. $0.2-0.8 \times 1-10$ μm, but may occur as coccoid forms, branched rods or fragile filaments; some strains are capsulated (see also MYCOSIDE C). Individual cells may stain uniformly or may exhibit banding or beading. The cells have a type IV cell wall (see ACTINOMYCETALES) which contains MYCOLIC ACIDS (see also CORD FACTOR, WAX D and PEPTIDOGLYCAN). Some strains form carotenoid pigments (see also PHOTO-CHROMOGEN and SCOTOCHROMOGEN).

Species occur in soil as free-living saprotrophs, in water [review: JAB (1984) 57 193-211], on plants, and as parasites and pathogens of man and other animals (including

fish). (See also LEPROSY, SCROFULA, TUBERCUL-

Metabolism is respiratory and, typically, chemoorganotrophic — though chemolithotrophic strains of e.g. M. marinum and M. smegmatis have been reported. In general, mycobacteria are not nutritionally fastidious - carbon and nitrogen sources including e.g. sugars, hydrocarbons and amino acids; in many species glycerol and asparagine are preferred sources of C and N, respectively. Growth may be stimulated e.g. by serum or egg-yolk (see also Lowenstein-Jensen MEDIUM), or by an increase in the partial pressure of CO₂. In 'slow-growing' strains, visible growth on solid media is not produced in less than 1 week (often 1-6 weeks) under optimum conditions, while in 'rapidly-growing' strains visible growth is produced within 1 week. [Nutrition/metabolism in mycobacteria: Book ref. 54, pp. 185-271; carbon metabolism in M. leprae: JGM (1983) 129 1481-1495.]

Tests used in the identification of mycobacteria include e.g. the ARYLSULPHATASE TEST, catalase test (e.g. persistence of CATALASE activity after incubation at 68°C/20 min in neutral phosphate buffer: Book ref. 53, p. 1707), NIACIN TEST, NITRATE REDUCTION TEST, T2H TEST, and TWEEN HYDROLYSIS. [Clinical tests and methods: Book ref. 120, pp. 216-

GC%: ca. 62-70. Type species: M. tuberculosis.

The genus (ca. 40 species: Book ref. 54) includes the following species (RG = rapidly growing; SG = slow growing).

M. africanum. SG; similar to M. bovis, but results are variable in the niacin and nitrate reduction tests. Can cause e.g. human tuberculosis.

M. avium. SG; non-pigmented. Typically: arylsulphatase -ve; catalase (68°C) variable; grows at 25-42°C; niacin -ve; nitrate not reduced; T2H test +ve; Tween hydrolysis -ve. Pathogenic e.g. for birds (cf. TUBERCU-LOSIS). (cf. M. intracellulare, M. xenopi.)

M. bovis ('M. tuberculosis var. bovis'). SG; non-pigmented. Microaerophilic. Typically: catalase (68°C) -ve; does not grow at 42°C; growth enhanced by pyruvate; niacin -ve; nitrate not reduced; T2H test -ve; Tween hydrolysis variable. A causal agent of TUBERCULOSIS in animals and in man. M. bovis BCG is a strain of M. bovis which differs e.g. in that growth occurs aerobically and is not enhanced by pyruvate. (See also BCG.) (cf. M. africanum.)

M. chelonei (= M. chelonae). RG; nonpigmented. Similar to M. fortuitum (q.v.) but *e.g. does not grow at 42°C; nitrate is not reduced.

M. farcinogenes. SG. Similar to M. fortuitum (according e.g. to DNA homology studies). A causal agent of bovine FARCY.

M. flavum. See XANTHOBACTER.

M. fortuitum. RG; non-pigmented. Typically: arylsulphatase +ve; grows at 42°C; Tween hydrolysis variable; nitrate is reduced. [DNA relatedness study of the M. fortuitum—M. chelonae complex: IJSB (1986) 36 458-460.]

M. haemophilum. SG; non-pigmented. Requires haemin for growth. Grows at 30°C, not at 37°C. One strain, isolated from a skin

granuloma.

M. intracellulare. SG; non-pigmented. Similar to M. avium, but typically arylsulphatase +ve; catalase (68°C) +ve; grows at 25–40°C (some strains grow at 40-45°C).

M. kansasii. SG; usually photochromogenic. Typically: arylsulphatase +ve; catalase (68°C) +ve; grows at 25-40°C, some strains grow at 42°C; niacin -ve; nitrate is reduced; T2H test +ve; Tween hydrolysis +ve. Can cause tuberculosis-like pulmonary lesions in man.

M. leprae. SG. The causal agent of LEPROSY. Can be cultured e.g. in the footpads of mice but, to date, has not been cultured in cell-free laboratory media. [Review: Book ref. 54, pp. 273–307; various aspects: Ann. Mic. (1982) 133B 5–171.]

M. lepraemurium. SG; non-pigmented. The causal agent of murine leprosy. Limited growth has been reported to occur on egg-yolk media when very large inocula are used.

M. marinum. SG; photochromogenic. Typically: arylsulphatase +ve; catalase (68°C) +ve; grows at 30°C, but can grow at 37°C only after serial subculture; niacin -ve; nitrate not reduced; T2H test +ve; Tween hydrolysis +ve. Causes disease in fish, and skin granulomas in man [Arch. Derm. (1986) 122 698-703]; more common in temperate than in tropical regions (cf. M. ulcerans).

M. microti. SG; non-pigmented. Similar to M. tuberculosis, but typically gives a variable nitrate reduction test and a negative T2H test.

M. paratuberculosis ('M. jonnei'). SG; nonpigmented. Typically (few strains examined): catalase (68°C) +ve; niacin -ve; nitrate not reduced; T2H test +ve; Tween hydrolysis variable. (See also MYCOBACTINS.) Causal agent of JOHNE'S DISEASE.

M. phlei. RG; scotochromogenic. Typically: arylsulphatase—ve (at 3 days), variable (at 1 week); grows at 52°C; Tween hydrolysis +ve. Found e.g. in soil and on vegetation; not pathogenic in man.

M. scrofulaceum. SG; scotochromogenic.

Typically: arylsulphatase -ve; catalase (68°C) +ve; grows at 25-42°C; niacin -ve; nitrate not reduced; T2H test +ve; Tween hydrolysis -ve.

M. senegalense. RG; scotochromogenic. A

causal agent of bovine FARCY.

M. simiae. SG; some strains photochromogenic, others non-chromogenic. Generally similar to M. scrofulaceum, but the niacin test is +ve in some strains.

M. smegmatis. RG; non-pigmented. Typically: arylsulphatase (at 1 week) +ve; grows at 45°C; Tween hydrolysis +ve. Found in smegma; non-pathogenic.

M. thermoresistibile. RG; scotochromogenic. Typically: arylsulphatase -ve; grows at

52°C. Found e.g. in soil.

M. tuberculosis. SG; non-pigmented. Typically: catalase (68°C) –ve; does not grow at 42°C; growth enhanced by glycerol, not by pyruvate; niacin +ve; nitrate is reduced; T2H test +ve; Tween hydrolysis variable. Typically forms rough, raised, whitish/pale buff colonies. A causal agent of TUBERCULOSIS. (cf.

M. ulcerans. SG; pigmentation variable. Typically: catalase (68°C) +ve; grows at 30°C but not at 37°C; niacin variable; nitrate not reduced; Tween hydrolysis -ve. Causes BURULI ULCER; found in tropical regions e.g. on vegetation (cf. M. marinum).

M. xenopi. SG; pigmentation variable. Similar to M. avium, but e.g. does not grow at 25°C, grows poorly at 37°C, and has an optimum growth temperature of ca. 42-45°C.

(See also TUBERCULOSIS.)

mycobactins A family of complex, lipophilic compounds which occur in the cell envelope in most species of Mycobacterium (not in Maratuberculosis or in some strains of Marium); they chelate trivalent metal ions, particularly solubilized ferric ions, and arc believed to function in iron transport—iron being released after enzymic reduction to the ferrous form. For in vitro growth M. paratuberculosis needs mycobactin or e.g. ferric ammonium citrate. [Structure of mycobactins Book ref. 54, pp. 242–245.] (See also Exochelins and Siderophores.)

Related compounds occur in Nocardia mycobiont A fungal symbiont — e.g. in LICHEN OF MYCORRHIZA.

Mycobionta Syn. EUMYCOTA. Mycocalia See NIDULARIALES.

Mycocaliciaceae See CALICIALES.
mycocecidia GALLS induced by fungi.
Mycocentrospora See HYPHOMYCETES; see [a]
CROWN ROT.

mycochrome See PHOTOINDUCTION and PHINHIBITION.

mycodextran Syn. NIGERAN.

DISEAS mycoheri mycolic fattv R'CH(found Coryne and Rh mycolic range (Coryne In m a C₅₀-C bonds, C22-C24 Book re terns ir JGM (1: 2733-27 [Mycc JGM (1: mycology mycoparas other fu stianseni. 76 9-22 endobioi parasitize parasite 1039-104 mycopar: trol on p cases of e.g. Mitr reduction soil [Bot. bility of e Pythium (See also mycophagou mycophenoli e.g. by P. hyphae fo 41 729-73 tumour ac inhibiting (see Appe Mycoplana bacteria of ies occur branching irregular, fix nitroge [JGM (198 69. [Book ^mycoplasma CUTES. (cf. genus MYCC

Mycoplasma

requiring,

Mycogon

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egalense. RG; scotochromogenic. A ent of bovine FARCY.

iiae. SG; some strains photochroothers non-chromogenic. Generally M. scrofulaceum, but the niacin test some strains.

gmatis. RG; non-pigmented. Typisulphatase (at 1 week) +ve; grows Tween hydrolysis +ve. Found in non-pathogenic.

rmoresistibile. RG; scotochromosically: arylsulphatase -ve; grows at

nd e.g. in soil.

rculosis. SG; non-pigmented. Typilase (68°C) -ve; does not grow at wth enhanced by glycerol, not by niacin +ve; nitrate is reduced; T2H Tween hydrolysis variable. Typis rough, raised, whitish/pale buff causal agent of TUBERCULOSIS. (cf.

rans. SG; pigmentation variable. catalase (68°C) +ve; grows at 30°C 37°C; niacin variable; nitrate not Tween hydrolysis -ve. Causes CER; found in tropical regions e.g. on (cf. M. marinum).

pi. SG; pigmentation variable. M. avium, but e.g. does not grow tows poorly at 37°C, and has an owth temperature of ca. 42-45°C.

UBERCULOSIS.)

A family of complex, lipophilic which occur in the cell envelope cies of Mycobacterium (not in M. losis or in some strains of M. y chelate trivalent metal ions, parolubilized ferric ions, and are function in iron transport — iron ed after enzymic reduction to the 1. For in vitro growth M. paratuieeds mycobactin or e.g. ferric citrate. [Structure of mycobactins: i4, pp. 242-245.] (See also exo-SIDEROPHORES.)

ompounds occur in Nocardia. fungal symbiont — e.g. in a YCORRHIZA.

iyn. EUMYCOTA.

3 NIDULARIALES.

e See CALICIALES.

ialls induced by fungi.

a See hyphomycetes; see also

See PHOTOINDUCTION and PHOTO-

Syn. NIGERAN.

Mycogone See HYPHOMYCETES; see also BUBBLE

mycoherbicide See BIOLOGICAL CONTROL.

mycolic acids α-Substituted, β-hydroxylated fatty acids (having the general formula R'CHOH.CHR".COOH), esters of which are found in the cell walls of e.g. species of Corynebacterium, Mycobacterium, Nocardia, and Rhodococcus; in Mycobacterium spp the mycolic acids fall within the approximate range C₆₀-C₉₀, in Nocardia C₄₀-C₆₀, and in Corynebacterium C₂₀-C₄₀.

In mycobacterial mycolic acids R' is usually a C₅₀-C₆₀ chain which often includes double bonds, cyclopropane rings etc, while R" is a C₂₂-C₂₄ chain. [Structure and biosynthesis: Book ref. 54, pp.113-128. Mycolic acid patterns in various strains of Mycobacterium: JGM (1983) 129 889-891; (1984) 130 363-367, 2733-2736. j (See also wax D.)

[Mycolic acids in Corynebacterium spp: JGM (1984) 130 513-519.]

mycology The study of FUNGI.

mycoparasite A fungus which is parasitic on other fungi. Mycoparasites include e.g. Christiansenia pallida [life history: Mycol. (1984) 76 9-22]; PIPTOCEPHALIS; and Rozella spp: endobiotic and holocarpic organisms which parasitize e.g. Polyphagus euglenae (itself a parasite of Euglena spp) [Mycol. (1984) 76 1039-1048] and other fungi and algae. Some mycoparasites can apparently exert some control on pathogens of higher plants — e.g., in cases of CLOVER ROT, Trichoderma viride (or e.g. Mitrula sclerotiorum) can bring about a reduction of the numbers of sclerotia in the soil [Bot. Rev. (1984) 50 491-504] [Susceptibility of e.g. Pythium spp to the mycoparasite Pythium oligandrum: SBB (1986) 18 91-96.] (See also contact biotrophic mycoparasite.)

mycophagous (mycetophagous) Fungus-eating. mycophenolic acid An антівіотіс produced e.g. by Penicillium brevicompactum in aerial hyphae formed on solid media [AEM (1981) 41 729-736]. It has antimicrobial and antitumour activity, blocking GMP synthesis by inhibiting the formation of XMP from IMP (see Appendix V(a)).

Mycoplana A genus of Gram-negative, aerobic bacteria of uncertain taxonomic affinity; species occur e.g. in soil. The organisms form branching filaments which fragment into irregular, flagellated rods. Some strains can fix nitrogen under microaerobic conditions [JGM (1982) 128 2073-2080]. GC%: ca. 64-69. [Book ref. 46, pp. 2118-2119.]

mycoplasma (1) A member of the class MOLLI-CUTES. (cf. MOLLICUTE.) (2) A member of the genus MYCOPLASMA.

Mycoplasma A genus of cell wall-less, sterolrequiring, catalase-negative bacteria (family

MYCOPLASMATACEAE) which occur as parasites and pathogens e.g. in the respiratory and urogenital tracts in man and other animals; diseases caused by, or associated with, Mycoplasma spp include e.g. AIR SACCULITIS, BRON-CHITIS, CONTAGIOUS BOVINE PLEUROPNEUMONIA, GLASSER'S DISEASE, NON-GONOCOCCAL URETH-RITIS, ovine MASTITIS, and PRIMARY ATYPICAL PNEUMONIA (sense 2). (Mycoplasma spp are also common contaminants in TISSUE CUL-TURES.) Cells: typically non-motile (but see below) and pleomorphic, ranging from spherical, ovoid or pear-shaped (ca. 0.3-0.8 μm diam.) to branched filamentous forms of nearuniform diameter, several µm to ca. 150 µm in length; filaments, the typical forms in young cultures under optimum conditions, subsequently transform into chains of coccoid cells which later break up into individual cells that are capable of passing through membrane filters of pore size 0.22 μm or 0.45 μm . The cells of some species have a 'tip' structure (possibly part of a microfibrillar 'cytoskeleton') which may be involved in attachment to host cells, and which (in motile species) appears to have a role in GLIDING MOTILITY the tip always pointing in the direction of

The trilaminar cytoplasmic membrane contains sterols (in addition to e.g. phospholipids and proteins) - thus rendering the cells susceptible to POLYENE ANTIBIOTICS and to lysis by e.g. digitonin (which complexes sterols). Some species bear a capsule or slime layer that in M. mycoides subsp. mycoides being a

Replication of the genome may precede cytoplasmic division; hence, 'multinucleate' filaments may exist for a time before individual cells are delimited by constriction. Budding can also occur.

Most Mycoplasma spp are facultatively anaerobic, some apparently being obligately anaerobic on primary isolation. All species chemoorganotrophic. 'Fermentative' species can use sugars such as glucose (metabolized to e.g. lactic acid via the EMP pathway), while 'non-fermentative' species can use e.g. arginine. All species need cholesterol or related sterols (e.g. cholestanol or stigmasterol). The organisms have a flavin-terminated electron transport chain which lacks both quinones and cytochromes. NADH oxidase occurs in the cytoplasm (cf. ACHOLEPLASMA). Growth occurs on complex media (e.g. HAY-FLICK MEDIUM); fastidious mycoplasmas may be grown on diphasic SP-4 medium [recipe: Book ref. 22, p. 746]. Colonies (usually <1 mm diam.) are typically of the 'fried egg' type: an opaque, granular central region, embedded in the agar, surrounded by nongranular surface growth. Optimum growth temperature of mammalian strains: 36-37°C. Many species produce weak or clear haemolysis; haemolysis appears to be due to the secretion of H₂O₂ (a product which is believed to account for some aspects of pathogenicity). Mycoplasmas are commonly sensitive to chloramphenicol and to tetracyclines; most species can tolerate 1:2000/4000 thallous acetate. Broth cultures of Mycoplasma spp (supplemented with DMSO or glycerol) can be stored at -70°C; alternatively, broth cultures may be lyophilized. GC%: ca. 23-40. Type species: M. mycoides.

The genus currently contains over 60 species which are differentiated on the basis of certain tests: e.g., utilization of glucose and mannose, arginine hydrolysis, phosphatase production, the FILM AND SPOTS reaction, and

haemadsorption.

M. glycophilum. A new avian species [JGM (1984) 130 597-6031.

M. laidlawii. Re-classified as Acholeplasma laidlawii.

M. mycoides. Non-motile cells which often form repeatedly branching filaments. Under certain conditions a culture may contain cells called rho-forms; a rho-form contains an intracellular organelle (function unknown) which consists essentially of an axial fibre (ca. 40-120 nm diam.) extending the length of the cell and occupying a major part of the cell's volume. M. mycoides subsp. mycoides causes contagious bovine pleuropneumonia.

M. pneumoniae (Eaton's agent). A slowlygrowing species which causes a primary atypical pneumonia in man. On primary isolation, the colonies (after 5-10 days' incubation) are ca. 50-100 µm in diameter and are entirely granular, i.e., they are not typical 'fried egg' colonies; fried egg colonies generally develop on subculture. The organisms are generally highly sensitive to erythromycin.

T-strain mycoplasmas. See ureaplasma.

[Book ref. 22, pp. 742-770. Mycoplasma characterization: Book ref. 98. Mycoplasma evolutionary tree from 5S rRNA sequencing data: PNAS (1985) 82 1160-1164.]

(See also MYCOPLASMAVIRUSES.)

mycoplasma virus type 1 phages Syn. PLECTRO-VIRUS.

mycoplasma virus type 2 phages Syn. PLASMA-VIRIDAE.

Mycoplasmataceae A family of non-helical, sterol-requiring, cell wall-less bacteria of the order MYCOPLASMATALES. Two genera: MYCO-PLASMA (urease-negative) and UREAPLASMA (urease-positive).

Mycoplasmatales An order of cell wall-less bacteria of the class MOLLICUTES; it comprises three families: MYCOPLASMATACEAE (non-helical cells which require sterols for growth), ACHOLEPLASMATACEAE (non-helical cells which do not require sterols), and SPIROPLASMATA-CEAE (cells often helical; sterols required for growth). [Book ref. 22, pp. 741-787.]

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mycoplasmaviruses BACTERIOPHAGES which infect members of the MYCOPLASMATALES: see MV-L3 PHAGE GROUP, PLASMAVIRIDAE, PLECTRO-VIRUS, SPIROPLASMAVIRUSES. [Review: Intervirol. (1982) 18 177-188.]

mycoplasmosis Any disease caused by a species of mycoplasma (q.v.)

mycorrhiza A stable, usually mutualistic association between a fungus and the root (or rhizoid) of a plant. Mycorrhizas occur in the majority of plants, including vascular and some non-vascular species (e.g. liverworts). The fungi involved (e.g. basidiomycetes, ascomycetes, deuteromycetes) are always associated with the primary cortex of the root, and many appear never to occur as free-living saprotrophs. The formation of mycorrhizas leads to improved uptake of nutrients by the host plant; nutrients are apparently absorbed by hyphae (which may extend some distance from the root) and are transported back to the root to be released into the host tissue. Mycorrhiza formation and efficacy is greatest in nutrient-poor soils, and may be reduced or eliminated by application of soil fertilizers. Three major types of mycorrhiza are recognized.

Ectomycorrhizas ('ectotrophic mycorrhizas') occur mainly in temperate forest trees; the fungi involved include basidiomycetes (e.g. agarics, boletes), ascomycetes (e.g. Tuber spp) and zygomycetes (Endogone). A given tree may associate with more than one species of fungus. In an ectomycorrhiza the fungal hyphae occur on the root surface and may penetrate between the cortical cells of the root, but the cortical cells themselves are not penetrated. Typically, the host root becomes completely enclosed by a sheath of pseudoparenchymal fungal tissue (the mantle); hyphae from the mantle may penetrate the soil surrounding the root and also penetrate between the cortical cells of the root to enmesh individual cortical cells in a network of hyphae (the Hartig net). The root is morphologically distinct from an uninfected root: e.g., it lacks root hairs and a root cap; it is thicker than an uninfected root and may be a different colour; it may branch extensively and characteristically — e.g. pinnately (in Fagus spp) or dichotomously (in Pinus spp) or not at all (e.g. in Quercus spp). In certain cases an ectomycorrhiza may develop in the form of nodules (= tubercles), each consisting. of a rounded, dense mass of mycorrhizal roots.

578